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PATENT APPLICATION
Attorney Docket No: 19313-001 CON

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Teit Johansen, Nikolaj Blom and Claus Hansen

TITLE: NOVEL NEUROTROPHIC FACTORS

MAIL STOP PATENT APPLICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT AND ACCOMPANYING
FORM PTO-1449**

Applicants submit herewith copies of modified PTO-1449 forms submitted in parent applications USSN 09/662,183, filed September 15, 2000 and USSN 09/347,613, filed July 2, 1999, now U.S. Patent No. 6,593,133 from which the presently filed application claims priority. Copies of the references listed therein are not enclosed but will be provided upon request. Applicants request that each of the listed documents be made of record in the presently filed application.

This information disclosure statement is being submitted concurrently with the filing of the application. Accordingly, no fee is believed due. However, the Commissioner is authorized to charge any fees due, or credit overpayments of same, to Deposit Account No. **50-0311**, Ref. No. 19313-001 CON.

Respectfully submitted,

Date: March 22, 2004



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PTO-309 (12-97)

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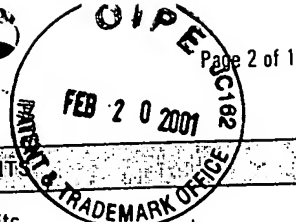
Modified Form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Application Number	09/662,183
	Filing Date	September 15, 2000
	First Named Inventor	Johansen <i>et al.</i>
	Group Art Unit	1635
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	19313-001 DIV

U.S. PATENT DOCUMENTS							
Exam Initials	Cite No.	U.S. Patent Document No.	Issue Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate
JS	A1*	5,084,350	1/28/92	Chang, <i>et al.</i>			2/16/90
JS	A2*	4,883,666	11/28/89	Sabel, <i>et al.</i>			4/29/87
JS	A3*	5,284,761	2/8/94	Aebischer, <i>et al.</i>			2/26/92
JS	A4*	5,618,531	4/8/97	Cherksey			7/13/93
JS	A5*	5,916,555	6/29/99	Lee, <i>et al.</i>			10/30/97
JS	A6*	5,834,029	10/10/98	Bellamkonda, <i>et al.</i>			7/20/94
JS	A7*	5,496,804	3/5/96	Reed, <i>et al.</i>			10/21/94
JS	A8*	5,795,716	8/18/98	Chee, <i>et al.</i>			10/21/94
JS	A9*	5,754,524	5/19/98	Wark			10/30/96
JS	A10*	5,733,729	3/31/98	Lipshutz, <i>et al.</i>			9/14/95
JS	A11*	5,800,992	9/1/98	Fodor, <i>et al.</i>			6/25/96

FOREIGN PATENT DOCUMENTS					
Exam Initials	Cite No.	Foreign Patent Document Office Number	Name of Patentee(s) or Applicant(s)	Date of Publication	Translation Yes No
JS	B1*	WO 93/06116	Lin, <i>et al.</i>	4/1/93	X
JS	B2*	WO 97/08196	Johnson, <i>et al.</i>	3/6/97	X
JS	B3*	WO 98/32869	Johansen, <i>et al.</i>	7/30/98	X

OTHER PRIOR ART - NON-PATENT LITERATURE DOCUMENTS		
Exam Initials	Cite No.	Name of Author, Title (when appropriate), Publication, Volume, Page(s), Date, Etc.
JS	C1*	Sauer and Oertel, 1994. Progressive degeneration of nigrostriatal dopamine neurons following intrastratial terminal lesions with 6-hydroxydopamine: a combined retrograde tracing and immunocytochemical study in the rat. <i>Neuroscience</i> 59: 401-415.
JS	C2*	Baloh, <i>et al.</i> , 1998. Artemin, a novel member of the GDNF ligand family, supports peripheral and central neurons and signals through the GFRα3-RET receptor complex. <i>Neuron</i> 21: 1291-1302, December.
JS	C3*	Milbrandt, <i>et al.</i> , 1998. Persephin, a novel neurotrophic factor related to GDNF and neurturin. <i>Neuron</i> 20: 245-253, Feb.
JS	C4*	Airaksinen, <i>et al.</i> , 1999. GDNF family neurotrophic factor signaling: Four masters, one servant?. <i>Mol. Cell. Neurosci.</i> 13: 313-325.
JS	C5*	Atschul, <i>et al.</i> , 1997. Gapped BLAST and PSI-BLAST: a new generation of protein database search programs. <i>Nucl. Acids Res.</i> 25: 3389-3402.
JS	C6*	Thompson, <i>et al.</i> , 1997. The ClustalX windows interface: flexible strategies for multiple sequence alignment aided by quality

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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Exam Initials	Cite No.	Name of Author, Title (when appropriate), Publication, Volume, Page(s), Date, Etc.
		analysis tools. <i>Nuc. Acids Res.</i> 25 : 4876-4882.
85	C7*	Eigenbrot and Gerber, 1997. X-ray structure of glial cell-derived neurotrophic factor at 1.9 A resolution and implications for receptor binding. <i>Nat. Struct. Biol.</i> 4: 435-438.
80	C8*	Lorenz, et al., 1996. Heteromultimeric CLC chloride channels with novel properties. <i>Proc. Natl. Acad. Sci. USA</i> 93: 9362-13366.
85	C9*	Borodovsky, et al., 1995. Detection of new genes in a bacterial genome using Markov models for three gene classes. <i>Acids Res.</i> 23: 3554-3562.
80	C10*	Finsen, et al., 1992. Somatostatin and neuropeptide Y in organotypic slice cultures of the rat hippocampus: an immunocytochemical and in situ hybridization study. <i>Neurosci.</i> 47:105-113.
85	C11*	Slooth and Gramsbergen, 1995. Detection of salicylate and its hydroxylated adducts 2,3- and 2,5-dihydroxybenzoic acids as possible indices for in vivo hydroxyl radical formation in combination with catechol- and indoleamines and their metabolites in cerebrospinal fluid and brain tissue. <i>J. Neurosci. Meth.</i> 60: 141-149.
80	C12*	Daopin, et al., 1993. Crystal structure of TGF- β 2 refined at 1.8 A resolution. <i>Proteins</i> 17: 176-192.
80	C13*	Sanicola, et al., 1997. Glial cell line-derived neurotrophic factor-dependent RET activation can be mediated by two different cell-surface accessory proteins. <i>Proc Natl Acad Sci USA</i> 94: 6238-6243.
80	C14*	Stoppini, et al., 1991. A simple method for organotypic cultures of nervous tissue. <i>J. Neurosci. Methods</i> 37: 173-182.
80	C15*	Zufferey, et al., 1997. Multiply attenuated lentiviral vector achieves efficient gene delivery in vivo. <i>Nat. Biotechnol.</i> 1997 15: 871-875.
80	C16*	von Schwedler, et al., 1993. Vif is crucial for human immunodeficiency virus type 1 proviral DNA synthesis in infected cells. <i>J. Virol.</i> 67: 4945-4955.
80	C17*	Masure et al., Enovin, a member of the glial cell-line-derived neurotrophic factor (GDNF) family with growth promoting activity on neuronal cells. <i>Eur. J. Biochem.</i> 266: 892-902 (1999).
80	C18*	Robertson and Manson, The GDNF-RET signalling in partnership, <i>Trends Genet.</i> 13: 1-3 (1997).
80	C19*	Lapchak, Therapeutic potentials for glial cell line-derived neurotrophic factor (GDNF) based upon pharmacological activities in the CNS, <i>Rev. Neurosci.</i> 7: 165-176 (1997).
80	C20*	Unsicker, GDNF: a cytokine at the interface of TGF-betas and neurotrophins, <i>Cell Tissue Res.</i> 286: 175-178 (1996).
80	C21*	Lapchak, et al., Pharmacological characterization of glial cell line-derived neurotrophic factor (GDNF): implications for GDNF as a therapeutic molecule for treating neurodegenerative diseases, <i>Cell Tissue Res.</i> 286: 179-189 (1996).
80	C22*	Nucleotide Sequence Database EMBL Entry AA844072, Accession No. AA844072. 3-10-1998
80	C23*	Massagué, et al., 1994. The TGF- β family and its composite receptor, <i>Trends Cell Biol.</i> 4: 172-178.
80	C24*	McDonald & Hendrickson, 1993. A structural superfamily of growth factors containing a cystine knot motif, <i>Cell</i> 73: 421-424.
80	C25*	Lin, et al., 1993. GDNF: A glial cell line-derived neurotrophic factor for midbrain dopaminergic neurons, <i>Science</i> 260: 1130-1132.

* a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. 09/347,613, filed July 2, 1999, and relied upon for an earlier filing date under 35 U.S.C. §120 (continuation, continuation-in-part, and divisional applications).

Examiner Signature		Date Considered	3-11-03
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PTO/SB (12-97)

Modified Form 1449/PTO SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Application Number	09/662,183
	Filing Date	September 15, 2000
	First Named Inventor	Johansen <i>et al.</i>
	Group Art Unit	1635
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	19313-001 DIV

U.S. PATENT DOCUMENTS							
Exam Initials	Cite No.	U.S. Patent Document No.	Issue Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate

FOREIGN PATENT DOCUMENTS						
Exam Initials	Cite No.	Foreign Patent Document Office	Number	Name of Patentee(s) or Applicant(s)	Date of Publication	Translation Yes No
<i>7</i>	B4*		WO 00/04050	Janssen Pharmaceutica N.V.	1/27/00	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Exam Initials	Cite No.	Name of Author, Title (when appropriate), Publication, Volume, Page(s), Date, Etc.

* a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. 09/347,613, filed July 2, 1999, and relied upon for an earlier filing date under 35 U.S.C. §120 (continuation, continuation-in-part, and divisional applications).

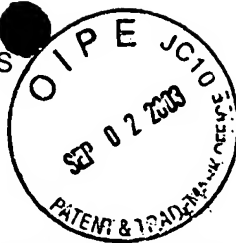
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Modified Form 1449/PTO SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Application Number	09/662,183
	Filing Date	September 15, 2000
	First Named Inventor	Teit E. Johansen <i>et al.</i>
	Group Art Unit	1647
	Examiner Name	Sharon L. Turner
	Attorney Docket Number	19313-001 DIV

U.S. PATENT DOCUMENTS							
Exam Initials	Cite No.	U.S. Patent Document No.	Issue Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate
JS	A12	6,284,540	9/04/01	Milbrandt et al.	435/455		
JS	A13	20020002269 A1	1-3-02 Not Issued	Milbrandt et al.			

FOREIGN PATENT DOCUMENTS						
Exam Initials	Cite No.	Foreign Patent Document Office Number	Name of Patentee(s) or Applicant(s)	Date of Publication	Translation Yes	No
JS	B5	WO 00/18799	Washington University	6 April 2000		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Exam Initials	Cite No.	Name of Author, Title (when appropriate), Publication, Volume, Page(s), Date, Etc.

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Serial No. _____, filed _____, and relied upon for an earlier filing date under
35 U.S.C. §120 (continuation, continuation-in-part, and divisional applications).

Examiner Signature		Date Considered	12-2-03
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Notice of References Cited	Application/Control No. 09/347,613	Applicant(s)/Patent Under Reexamination JOHANSEN ET AL.	
	Examiner Sumesh kaushal	Art Unit 1633	Page 1 of 3

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	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Rosenberg et al., Gene therapist, heal thyself, 2000, SCIENCE, Vol. 287, p. 1751
	V	Verma, Gene therapy: Beyond 2000,2000, MOLECULAR THERAPY, Vol. 6, pp. 493
	W	Friedmann, Principles for human gene therapy studies, 2000, SCIENCE, Vol. 287, pp. 2163-2164
	X	Anderson, Human gene therapy, 1998, NATURE, Vol. 392, pp. 25-30

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 09/347,613	Applicant(s)/Patent Under Reexamination JOHANSEN ET AL.	
	Examiner Sumesh kaushal	Art Unit 1633	Page 2 of 3

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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Verma et al., Gene therapy-promises, problems and prospects, 1997, NATURE, pp. 239-242
	V	Varmus, Gene therapy: Not ready for prime time, 1996, NATURE MEDICINE, Vol. 2, pp. 7-8
	W	Airaksinen et al., GDNF family neurotrophic factor signalling: Four masters, one servant?, 1999, MOLECULAR AND CELLULAR NEUROSCIENCE, Vol. 13, pp. 313-325
	X	Rosenblad et al., In vivo protection of nigral dopamine neurons by lentiviral gene transfer of the novel GDNF-family member neublastin/artemin, 2000, MOLECULAR AND CELLULAR NEUROSCIENCE, Vol. 15, pp. 199-214

*A copy of this reference is not being furnished with this Office action. (See MPEP, § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References CitedApplication/Control No.
09/347,613Applicant(s)/Patent Under
Reexamination
JOHANSEN ET AL.Examiner
Sumesh kaushalArt Unit
1633

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	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	During et al., Towards gene therapy for the cetral nervous system, 1998, MOLECULAR MEDICINE, Vol. 11. pp. 485-493
	V	AC005051, Waterston, 1998
	W	AF0G7197, Li, 1998
	X	AAN40033, Gray et al., 1992

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